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Ansay et al.

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### (54) VEHICLE LAUNCH ASSEMBLY FOR UNDERWATER PLATFORMS

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89/1.809; 124/69

**Field of Search** ...... 114/319, 238;

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#### (56)References Cited

### U.S. PATENT DOCUMENTS

1,985,184 A \* 12/1934 Methlin \* 7/1985 Schmitt 4,527,502 A 4,848,210 A \* 7/1989 Bissonnette 5,099,745 A \* 3/1992 Hubbell et al. 5,200,572 A \* 4/1993 Bissonnette et al. 5,231,241 A \* 7/1993 Bissonnette 5,410,978 A \* 5/1995 Waclawik et al. \* 5,421,244 A 6/1995 Hubbell et al.

8/1995 Moody 5,438,948 A \* 5,495,819 A \* 3/1996 Marion 6,216,626 B1 \* 4/2001 Curtis 6,220,196 B1 \* 4/2001 Escarrat

### FOREIGN PATENT DOCUMENTS

DE FR

2462267 A1 \* 3/1977

\* 5/2001 553125

\* cited by examiner

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#### (57)**ABSTRACT**

A vehicle launch assembly for underwater platforms includes a water tank mounted on the platform, and a plunger movably disposed in the tank and dividing the tank into first and second zones, the first zone being in communication with a. water environment in which the platform is disposed, and the second zone being in communication with a launch tube inlet line mounted on the platform. An actuator is connected to the plunger and is operable to move the plunger in the tank. A triggering device initiates operation of the actuator, moving the plunger in the tank to push water from the tank second zone to the launch tube inlet line to eject a vehicle from the launch tube, or moving the plunger to enlarge the tank second zone to draw water thereinto from a valve in communication with the water environment and the tank.

# 15 Claims, 4 Drawing Sheets

